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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,567	09/30/2003	Michael E. Critchlow	249212025700	7900

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EXAMINER	
MARC, MCDIEUNEL	

ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/676,567	CRITCHLOW, MICHAEL E.	
	Examiner	Art Unit	
	McDieunel Marc	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *23 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21 and 23-28* is/are rejected.

7)☒ Claim(s) *22 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *9/30/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/1/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-29 are presented for examination.

Specification

2. The abstract of the disclosure is objected to because the word "invention" also the title should be deleted on top of the abstract. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7, 9, 11-15, 17, 19, 23, 25-26 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by **Ellis et al.** (U.S. Pub. 20030137766 A1).

As per claims 1, 12 and 23, Ellis et al. teaches a system and an associated method having a calibration cartridge for automated cartridge library including a method

for calibrating robotic picker mechanisms in automated storage library systems (see section [0038]), comprising:

detecting a calibration mark associated with a storage library with at least one sensor (section [0038] as mentioned above, wherein calibration position equates calibration mark), wherein the at least one sensor detects the calibration mark from a first position and a second position (see section [0031], wherein optical sensors being used for calibration), the first position and the second position separated by an offset distance (inherently calibration invokes first, second.. and so on offset distance, therefore such limitation belongs to design choice approach); determining a relative shift in the detected calibration mark detected from the first position and the second position; and determining a distance between the calibration mark and a reference position based on the shift in the detected calibration mark, the offset position (see calibration position as mention above and [0041]), and a focal length associated with the at least one sensor used to detect the calibration mark (see section [0031], wherein the optical inherently covers focal length); at least one controller (see sections [0032 and 0069]); a housing adapted to include storage slots and one or more media drives (see fig. 4).

As per claims 2-7, 9, 11, 13-15, 17, 19, 25-26 and 28, Ellis et al. teaches calibration cartridge for automated cartridge library including a method, wherein the reference position is associated with an average position of the first position and the second position; wherein the at least one sensor includes a first sensor and a second sensor separated by the offset distance (falls into design choice) (as mentioned above calibration position contains repetition), see foot note[1]; wherein the first position and the

[1] Calibration is the process of determining the relationship of sensor output to the actual value of the input. It is desirable to calibrate the complete sensor system if maximum accuracy is required. One way to calibrate is to measure the values at known points and record the outputs obtained. Then, if these input-output relationships are obtained, we know how to correct the sensor at these points, at least. In the domain of robot vision, camera calibration can be partitioned into two categories, according to two different camera parameter types: intrinsic calibration and extrinsic calibration. The former calibrates the intrinsic parameters of a camera, such as focal length, principal point, etc. The latter calibrates the

second position are in a plane substantially orthogonal to a direction between the at least one sensor and the calibration mark (see fig. 4, however orthogonal direction falls into design choice); further including a light source associated with the gripper assembly for directing light to the approximate position of the calibration mark (see section [0031]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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extrinsic parameters like the orientation angles, pose information of the camera focal point with respect to some coordinate system. Briefly, automatic, extrinsic calibration is any procedure which results in the robot's position and orientation being known to a specified level of accuracy based on sensory data and knowledge of the environment. There are at least two reasons why automatic calibration is needed. First of all, calibration by hand is usually tedious and time-consuming. Secondly, owing to the fact that accuracy requirements may be high, a procedure which relies on human judgement and motor skills may have a bigger error than one which is done by machine automatically. In other words, automatic calibration can achieve greater accuracy than manual. Automatic calibration can be related to the general problem of robot pose estimation.

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 8, 10, 18, 20-21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis et al. 66' in view of Ellis (U.S. Pat. No. 5237468 A).

As per claims 8, 10, 18, 20, 21 and 27, Ellis et al. 66' teaches essential features of the invention substantially as claimed with the exception of the limitations below taught by Ellis 68' .

However, Ellis 68' teaches a system and an associated method, wherein the at least one sensor is attached to a robotic picker mechanism, wherein the sensor is coupled to a robotic picker mechanism (see section [0031], wherein optical sensor being considered as camera) (see fig. 2, elements 41 and 59); wherein the sensor includes a CMOS imaging device (inherently Ellis 68' camera contains CMOS).

It would have been obvious to a person of ordinary skill in the art at the time of the of the invention to modify the teaching of Ellis et al. 66' with the teachings of Ellis 68' , because this modification would have enhanced Ellis et al. 66' teaching in order to have a camera couple to the picker/gripper, thereby improving the efficiency and the reliability of a library robotics using parallax viewing.

8. Claims 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellis et al. 66' in view of Ellis (U.S. Pat. No. 6385003).

As per claims16 and 24, Ellis et al. 66' 66' teaches essential features of the invention substantially as claimed with the exception of the limitations below taught by Ellis 03' .

However, Ellis 03' teaches a system, wherein the calibration mark is associated with at least one of a storage bin and a drive bezel (see abstract and col. 5, lines 19-26).

It would have been obvious to a person of ordinary skill in the art at the time of the of the invention to modify the teaching of Ellis et al. 66' with the teachings of Ellis 03' , because this modification would have enhanced Ellis et al. 66' teaching in order to introduce the drive bezel, thereby improving the efficiency and the reliability of a library robotics using parallax viewing.

Allowable Subject Matter

9. Claims 22 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fail to teach or fairly suggest with respect to claim 22, wherein the calibration mark includes at least one of a rectangular shaped and cross-hair indicium; with respect to claim 29, wherein the calibration mark includes an optically detectable indicium in combination with the other features of the claimed invention.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to McDieunel Marc whose telephone number is (571) 272-6964. The examiner can normally be reached on 6:30-5:00 Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

m. marc

McDieunel Marc

Thursday, June 16, 2005

MM/